What is claimed is:

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1. A method for automotive evaporative leak detection for use with a system having a tank with a vapor pressure having a known value at a first point in time, the method comprising the steps of:

a. measuring and recording a first temperature of the vapor at substantially the first point in time;

b. measuring and recording the temperature and pressure of the vapor at a second point in time;

c. computing a temperature-compensated pressure based on previously measured values; and

d. comparing the temperature-compensated pressure with the pressure measured at a second point in time to detect a leak.

2. The method according to claim 1, wherein temperature-compensated pressure is computed as a function of the pressure measured at the first point in time and of the measured temperatures.

3. The method according to claim 2, wherein the function comprises the expression:

$$P_c = P_1 (2 - T_2/T_1)$$

where P_c is temperature-compensated pressure, T_1 is the temperature at the first point in time and T_2 is the temperature at the second point in time.

4. A method for making temperature-compensated pressure readings in an automotive evaporative leak detection system having a tank with a vapor pressure having a value known at a first point in time, comprising the steps of:

a. measuring a first temperature of the vapor at substantially the first point in time;

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b. measuring the temperature of the vapor at a second point in time; and

c. computing a temperature-compensated pressure based on the previously measured values.

5. The method according to claim 4, wherein the temperature-compensated pressure is computed as a function of the pressure measured at the first point in time and of the temperature measured at the first and second points in time.

6. The method according to claim 5, wherein the function comprises the expression:

$$P_c = P_1 (2-T_2/T_1)$$

where P_c is the temperature-compensated pressure, P_1 is the pressure measured at the first point in time, T_1 is the temperature measured at substantially the first point in time and T_2 is the temperature measured at the second point in time.

7. In an automotive evaporative leak detection system, a temperature-compensated pressure sensor comprising:

a. a pressure sensing element;

b. a temperature sensing element;

b. a processor coupled to the pressure sensing element and to the temperature sensing element and receiving, respectively, pressure and temperature signals therefrom; and

c. logic implemented by the processor for computing a temperature-
compensated pressure on the basis of a pressure and temperature measurements.

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8. The sensor according to claim 7, wherein the temperature-compensated pressure is computed as a function of the pressure at a first point in time and the temperature measured at substantially the first point, and at a second point, in time.

9. The sensor according to claim 8, wherein the function comprises the expression:

$$P_c = P_1 (2 - T_2/T_1)$$

where P_c is the temperature-compensated pressure, P_1 is the pressure measured at the first point in time, T_1 is the temperature measured at substantially the first point in time, and T_2 is the temperature measured at the second point in time.

10. In an automotive evaporative leak detection system, a sensor subsystem for compensating for the effects on pressure measurement of changes in the temperature of the fuel tank vapor, the subsystem comprising:

a. a pressure sensor in fluid communication with the fuel tank vapor;

b. a temperature sensor in thermal contact with the fuel tank vapor;

c. a processor in electrical communication with the pressure sensor and with the temperature sensor; and

d. logic implemented by the processor for computing a temperature-compensated pressure based on pressure and temperature measurements made by the pressure and temperature sensors.

11. The subsystem according to claim 10, wherein the logic comprises a computation of temperature-compensated pressures as a function of pressure measured at a first point in time and of the temperature measured at the first, and at a second, point in time.

12. The subsystem according to claim 11, wherein the function comprises:

$$P_c = P_1 (2 - T_2/T_1)$$

where P_c is the temperature-compensated pressure, P_1 is the pressure measured at the first point in time, T_1 is the temperature measured at substantially the first point in time and T_2 is the temperature measured at a second point in time.

13. The subsystem according to claim 11, wherein the logic also determines the presence or absence of a leak based upon the temperature-compensated pressure and the pressure measured at the second point in time.

14. The subsystem according to claim 12, wherein the logic also determines the presence or absence of a leak based upon the temperature-compensated pressure, P_c, and the pressure measured at the second point in time, P_2.

15. The subsystem according to claim 14, wherein a leak is determined to exist if the pressure P_2 is less than the temperature-compensated pressure, P_c.

16. The subsystem according to claim 14, wherein a leak is determined to exist if the pressure P_2 is greater than the temperature-compensated pressure, P_c.

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